

Attorney's Docket:
99P7740US

PATENT APPLICATION
09/378,108

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IN THE CLAIMS

1. (Currently Amended) A system for minimizing the loss of information in cordless communications, comprising:

a first data station having control logic, the control logic operable to:

establish a plurality of individual communication channels needed of a frame, the communication channels operable to transmit information between the first data station and a second data station, each communication channel associated with a frequency of a frequency subset of a plurality of frequency subsets, a frequency band divided to yield the plurality of frequency subsets;

select a first channel frequency from a first frequency subset of the plurality of frequency subsets, the first channel frequency to be used for the first channel between the two data stations;

measure one or more parameters for evaluating interference of the first channel during transmission;

determine based on the one or more measured parameters a spectral separation from the first channel; and

select a unique channel frequency for at least one other channel based on the first channel and the determined spectral separation, the unique channel frequency selected from a second frequency subset of the plurality of frequency subsets, the second frequency subset different from the first frequency subset; and

response logic residing in the second data station, the response logic operable to receive the information from the first data station on the plurality of communication channels.

2. (Original) The system of Claim 1, wherein the channels are operable to both transmit and receive information in duplex.

3. (Previously Presented) The system of Claim 1, the interference measured by a bit error rate of the first channel.

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4. (Previously Presented) The system of Claim 3, wherein the bit error rate comprises either a short-term error rate or a long-term error rate.

5. (Original) The system of Claim 1, wherein each channel frequency is changed using a frequency hopping scheme.

6. (Original) The system of Claim 1, wherein the control logic is further operable to:

- a) model interference encountered over individual channels between the data stations; and
- b) select parameters that minimize the loss of information over each of the individual channels.

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7. (Currently Amended) A method for minimizing the loss of information in cordless communications, comprising:

- a) establishing a plurality of individual communication channels between at least two data stations, the plurality of communication channels corresponding to a frame, each communication channel associated with a frequency of a frequency subset of a plurality of frequency subsets, a frequency band divided to yield the plurality of frequency subsets;
- b) selecting a first carrier frequency from a first frequency subset of the plurality of frequency subsets, the first carrier frequency to be used for a first of the plurality of channels;
- c) measuring one or more parameters for evaluating interference of the first carrier frequency during transmission;
- d) determining based on the one or more measured parameters a spectral separation from the first carrier frequency relating to achieving a maximum throughput of information over the channels between the data stations; and
- e) selecting a second carrier frequency for at least one other channel based on the first carrier frequency and the determined spectral separation, the second carrier frequency selected from a second frequency subset of the plurality of frequency subsets, the second frequency subset different from the first frequency subset.

8. (Original) The method of Claim 7, wherein the maximum throughput of information over the channels is equal to the maximum throughput of information over the plurality of channels.

9. (Previously Presented) The method of Claim 7, wherein the determining step further comprises measuring error rates for a plurality of frequencies usable for each of the channels.

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10. (Original) The method of Claim 7, wherein the determining step further comprises:

- a) modeling interference over one of the channels; and
- b) selecting parameters that minimize the loss of information over the plurality of channels.

11. (Previously Presented) The method of Claim 7, further comprising determining parameters relating to achieving a maximum throughput of information over the channels between the data stations at predetermined intervals of time.

12. (Previously Presented) The method of Claim 7, further comprising changing the frequency of each channel utilizing a frequency hopping scheme.

13. (Previously Presented) The method of Claim 12, wherein the selecting a unique frequency step comprises separating all of the frequencies at an optimal spectral separation.

14. (Previously Presented) The method of Claim 7, further comprising selecting the unique frequency of the at least one other channel from a table.

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15. (Currently Amended) A method for minimizing the loss of information in cordless communications, comprising:

- a) providing at least two data stations having a plurality of communication channels of a frame to transmit information between the data stations, each communication channel associated with a frequency of a frequency subset of a plurality of frequency subsets, a frequency band divided to yield the plurality of frequency subsets;
- b) ~~determining~~ selecting a first carrier frequency for a first of the channels between the data stations, the first carrier frequency selected from a first frequency subset of the plurality of frequency subsets;
- c) measuring one or more parameters for evaluating interference of the first carrier frequency during transmission;
- d) determining based on the one or more measured parameters a spectral separation from the first of the channels;
- e) repeating the steps for another channel; and
- f) selecting carrier frequencies for all of the plurality of channels based on the determined spectral separations and the first channel, a carrier frequency selected for a second channel from a second frequency subset of the plurality of frequency subsets, the second frequency subset different from the first frequency subset.

16. (Previously Presented) The method of Claim 15, wherein the determining a spectral separation step further comprises determining parameters to yield an optimal spectral separation.

17. (Original) The method of Claim 15, wherein the determining parameters step further comprises:

- a) evaluating whether any signal source is interfering with the channel between the data stations on the first unique carrier frequency; and
- b) selecting another carrier frequency for the channel.

18. (Previously Presented) The method of Claim 16, wherein the parameters represent an error rate measured over the channel.

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19. (Original) The method of Claim 15, further comprising the data stations transmitting information that is time division multiplexed and time division duplexed over the communication channels.

20. (Previously Presented) The method of Claim 15, wherein steps (b)-(e) are performed at regular intervals of time.

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21. (Currently Amended) An apparatus for minimizing the loss of information in cordless communications comprising control logic, the control logic operable to:

select a first channel frequency associated with one of a plurality of communication channels of a frame, each communication channel associated with a frequency of a frequency subset of a plurality of frequency subsets, a frequency band divided to yield the plurality of frequency subsets, the first channel frequency selected from a first frequency subset of the plurality of frequency subsets;

access a plurality of frequency sets, each frequency of a frequency set corresponding to a channel;

remove any poor quality frequency set from the plurality of frequency sets;

measure one or more parameters for evaluating interference of the first channel during transmission;

determine based on the one or more measured parameters a spectral separation from the first channel frequency; and

select at least one channel frequency for the remainder of the plurality of channels based on the determined spectral separation and selected from at least one of the plurality of frequency sets, the at least one channel frequency selected from a second frequency subset of the plurality of frequency subsets, the second frequency subset different from the first frequency subset.

22. (Cancelled)